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ABSTRACT

Writing instructors teaching in computer classrooms recognize that the goals and content of these writing courses have changed since precomputer days. While the emphasis is still on writing, skills related to producing texts in electronic environment are also being taught. Technology is changing the nature of writing instruction, the writing process, the type of written products produced, and even the concept of written communication. Few studies assess how or how well students acquire the skills necessary for using computers effectively as writing tools. Studies that do reveal the complexity of the teaching/learning situation. Teaching and assessing electronic technology needs a place in the writing curriculum. For example, a writing teacher could teach the writing component and a desktop publishing instructor could teach a lab on the technology. The teacher responsible for teaching the technology could periodically assign various ungraded process-based tasks aimed at assessing students' technological skills. Still the final portfolio of writing should remain the ultimate indicator of a writer's success. (Sixteen references are attached.) (MM)

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Evaluation in the Electronic Classroom: A Double-Edged Sword--Or is it?

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Evaluation in the Electronic Classroom: A Double-Edged Sword--Or is It?

Teachers who teach writing in computer classrooms recognize that the goals and content of these writing courses have changed since precomputer days. While we strive to keep the emphasis on writing, we also teach, to one degree or another, skills related to producing texts in electronic environments. At the minimum this means assisting students learn to use a word-processing program. But we often teach other software as well, from spelling checkers to desktop publishing (DTP). Technology is changing the nature of writing instruction, the process of writing, the type of written products produced, and even our conception of written communication.

As teachers and directors of writing programs it is time we asked ourselves some difficult questions. How responsive is our teaching to the new demands caused by the technology? How well do our evaluation processes reflect the changing content of our courses? Do our assessments strive to reflect the students' mastery of the technology as well as their ability as writers? Are we developing new standards for evaluating students' written products that take into account their increasingly different nature from

those produced in traditional classrooms? If not, why not? Has the teaching of writing become a double-edged sword: one edge representing writing and the other technology?

For many writing teachers, if not most, these concerns expose our Achilles' heel. We do not see ourselves as teachers of mechanical skills. We identify with the world of humanistic concerns: values, ideas, and the search for truth. Yet computers are bumping our heads against a hard reality. If we accept Billie Wahlstrom's challenge "to train writers to write well using the technology they will find in their work" (1989, p. 164), than we must also acknowledge the importance of assessing students' skill in using the electronic technology. Many of us teach computers half-heartedly and rarely evaluate students' word processing skills.

Few studies assess how or how well students acquire the skill necessary for using computers effectively as writing tools. Studies that do, reveal the complexity of the teaching/learning situation. A two-year ethnography that I conducted (Herrmann, 1985b, 1986) showed that all eight high school students felt anxiety and three had protracted difficulty leaning to use the technology, despite daily instructional assistance over a school year. A shorter study I conducted of inservice teachers of the gifted (1988)

also revealed the participants' anxiety about using computers and the difficulties some had learning to word process.

A large-scale study by Bernhardt, Edwards, & Wojahn (1989) looked at freshman composition students in a comparison of twenty-four computer-using and noncomputer-using sections. The study found, among other things, that students in the computer sections consistently withdrew more often, had worse attendence, were tardy more, and failed to complete assignments more often. Although some students clearly benefited from using the computers, the study suggests differences among the computer-using students in their use of and adaptation to the technology. One possible explanation came from the students themselves, who typically advised teachers and lab assistants of their need for better assistance in learning to use the computer commands and software.

Gail Hawisher's (1989) review of computers and writing research, particularly the findings from 10 case studies, suggests that writers transfer existing strategies to their computer use. For example, students who did not revise extensively before word processing, did not revise extensively using computers. It should be noted, however, that five of the case studies took place over short periods

of time--ranging from only a few days to 10 weeks--and three other studies did not report the time frame. Undoubtedly, writers require longer periods of time to become comfortable enough with the word-processing program to adapt their usual writing process to the new tool, a factor that makes the findings from some of these case studies problematical.

A study by Christina Haas (1989) examined the effects on writers' planning processes using pen and paper and word processing. The results point to important differences in planning between the two. When writers used word processing alone, there was significantly less planning before writing and significantly less high-level planning than when writers used pen and paper. Yet there was significantly more local-level planning when word processing only was used. These findings suggest that the choice of writing technology influences a writer's composing process and may exacerbate, rather than facilitate, certain aspects of the writer's task.

Although electronic writing has brought about changes in the process of composing, we are just beginning to understand the pedagogical consequences of such changes. The nature of written products is also changing to include more concern with visual features. According to Steve Bernhardt, visually informative prose is pervasive and we

need to teach it. He believes that "classroom practice which ignores the increasingly visual, localized qualities of information exchange can only become increasingly irrelevant" (1986, p. 77).

In DTP, which permits the assembly of various data files into a page layout program, relationships between form and content take on new meaning when writers integrate ideas and words with graphics and other features involved in the production of publications having a high level of visual impact. In particular the "shift from text-based to graphics-based word-processing software," as John Ruszkiewicz describes desktop publishing (1988, p. 9), brings to the fore the question of what we are teaching and how we are evaluating it. According to Ruszkiewicz, "the graphics revolution could lead to the reconceptualization of composing as a thinking act that enables more human beings to exercise more faculties, skill and imagination than was ever possible before" (1988, p. 14-15).

Wahlstrom (1989) indicates that DTP is part of a major transformation in information handling taking place in society today. She states,

> What the computer only hinted at, DTP makes clear: fundamental alterations in the word/print relationship resulting from digital communication technologies. Like it or not, DTP and the changes it brings are part of the writer's world, and so they must be part of the world of the writing

> teacher and the writing program administrator as well. (1989 p. 163)

In "Redefining Literacy: The Multilayered Grammars of Computers," Cynthia Selfe (1989) examines the different sets of conventions that individuals must learn, namely the conventions of the page and the conventions of the screen, if they hope to function literately within a computer-supported communications environment . She points out that the grammar of written texts--things such as arrangement, structure, form, and appearance--are changing as a result of our new technologies. The fact that students within electronic environments now use color, flashing notes and headings, boldface type and so forth to "represent a visual relation of logical structures," is one of Selfe's compelling examples of this new literacy.

Selfe maintains that

> Our profession will have to work diligently in the next few years to identify and explore the changing nature of literacy within a computer-supported writing environment, and to consider the implications of these changes on our teaching. (1989, p.13-14)

Furthermore, there is mounting evidence that computers foster collaborative writing classrooms (Daiute, 1986; Dickinson, 1986; Herrmann, 1985a, 1985b; Papert, 1980; Selfe & Wahlstrom, 1986). As Janet Eldred (1989) points out, computer networks increase the "connectivity" of the

composition classroom, making possible a social context for writing by linking terminals, individuals, groups, and minds together. And hypertext and hypermedia environments also create a multitude of new options for writers' processes and products.

Assuming the information revolution continues, we can expect the problems of integrating computer technology into the writing curriculum to intensify. The challenges of teaching and learning within these more complex environments means that what we teach as well as how we assess what we teach must change. Evaluation needs to become sensitive to the literacy requirements imposed on students by our new communicative contexts. This is necessary for two reasons: first, because teachers need diagnostic information that tells them whether students are learning what has been taught, and secondly, because students should receive grades that reflect the entirety of the teaching/learning situation.

I, myself, have been hesitant to create instruments of assessment that measure--or judge--the students' mastery of the technologically in my own courses. I have a two-fold explanation for this position. First, although I teach students the fundamentals of the hardware and software at the beginning of the semester and continue to provide

technological instruction throughout, I want the emphasis in my courses to be on writing. This has meant a reluctance to test students' skill with the technology. Secondly, I believe it is important to teach all students, even the anxious ones. It seems unfair, once I've convinced them that computers aren't so scary afterall, to subjugate them to a punishing test of skill. I suspect other writing teachers may not evaluate students' technolgical competence for similar reasons.

But my question today is, given the far-reaching changes taking place in written texts, given our increasing understanding of the social nature of writing and, given the opportunities to collaborate via networking in electronic environments, both at school and at work, can we continue to maintain this head-in-the-sand-position?

One convincing argument that we cannot is the fact that programs for desktop publishing and hypertext are not learned quickly. People in the workplace take months--even as long as two years--to learn to use DTP effectively. Surely we can no longer assume that students should pick up such technological know-how as best they can. Nor should our evaluations continue to focus solely on written products using traditional criteria.

What kinds of changes in teaching and evaluation should we be making? As we find ourselves integrating sophisticated software programs into our writing classes, team teaching may become increasingly desirable. For example, a writing teacher could teach the writing component and a DTP instructor could teach a lab in the technology. Such a course could carry additional credit. The two sections would consist of (1) a writing/editing section where students develop pieces of writing using a word-processing program and where they edit each other collaboratively, perhaps toward creating a joint newsletter or magazine, and (2) a DTP lab where students would learn the principles of layout and design and, again working collaboratively, use electronic graphics and layout programs to publish their newsletter or magazine.

The teacher responsible for teaching the technology could periodically give various ungraded process-based tasks aimed at assessing students' technological skills. Such process-based assessments could serve a multiple purpose: (1) They could provide an impetus with a deadline for students to acquire certain technological skills; (2) They would serve to underscore for students the importance of learning the technology; and (3) They would provide the

teacher with diagnostic information, making it possible for the teacher to assist students as needed.

Although the course should have assignment deadlines for drafts throughout the semester, I prefer the end-of-the-semester portfolio--and, of course, the portfolio could consist of electronic files and/or hard copy--as a way of evaluating students' work in our technologically complex writing environments. Portfolios provide students with the opportunity to receive feedback--concerning the content and form of their writing as well as the visual component of their work--from teacher and peers during the semester without the penalty of a grade. A final portfolio gives students the entire semester to acquire competence with the technology and to make progress in their writing before being graded.

As part of the portfolio, I recommend that students include self-evaluations that describe in detail their process in creating each project. This is especially desirable when projects have been carried out collaboratively to report what each student has done. These self-reports would develop students' metacognitive insights concerning what they did and why they did it. At the same time, they provide the teacher with a window into the student's process. Who was the intended audience? What was

the writer's purpose? Was this a collaborative writing task and, if so, who did what? What type of feedback did the writer receive from peers, teachers, and others? How long did the student work on the project? What parts of a project are boiler-plated and why? What parts are original? What, if any, false starts did the student make before completing the task? What role did revision play?

The writing and technology teachers should view and evaluate these portfolios from three major perspectives: (1) As an example of the student's writing, e.g. How effective is the writing given the audience, purpose, and content of the text? (2) As an indication of the student's expertise using the technology, e.g. How competently crafted is the total visual effect? The graphics? The layout? The fonts? The use of white space? and (3) As a reflection of the student's ability to integrate the writing with the technology to create a successful written product, e.g. How effective are the visual factors, given the audience, purpose, and content of the text? Does form follow function? Do the graphics improve or detract from the communication?

In conclusion, I am advocating that we make place in the writing curriculum for teaching and assessing the electronic technology that we increasingly expect our

students to use. I suggested earlier in this paper that the teaching of writing and the teaching of technology may represent a double-edged sword. It is, at least, to the extent that our courses increasingly involve the teaching of writing in conjunction with the teaching of skills related to using the electronic technology.

However, while the criteria used in our evaluation processes should change based on the changing nature of the written/printed word, the assessment remains a single-edged sword. The final portfolio of writing should remain the ultimate indicator of the writer's success. While a successful product may not reveal the writer's process, it, nevertheless, continues to be our best barometer of the student's ability. We need to continue evaluating students in a manner that captures the entirety of what we have taught and what we expect the students to learn.

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